



Apple Pro Training Series

GarageBand

Create, edit, and share great music
on your Mac and iOS device

Mary Plummer

Lesson and media files available for download



Apple Pro Training Series

GarageBand

Mary Plummer



Apple Pro Training Series: GarageBand
Mary Plummer
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Getting Started

Welcome to the official training course for GarageBand, Apple's totally redesigned and more-powerful-than-ever music recording and arrangement software. This book is for everyone from the beginner just curious about music creation to the seasoned professional who happens to be new to GarageBand. Even if you have been using the previous versions of GarageBand for years, this book is packed with all-new projects and features that you'll want to learn.

Leave all apprehension behind. This isn't a manual that goes step-by-step through every button, instrument, and preference. Nor is it a cursory tour that detours at will through GarageBand with no particular direction in mind. Rather it is a guided, in-depth, hands-on workshop to immerse you in GarageBand and many of the application's exciting and powerful recording, arranging, music-making, fixing, mixing, and sharing tools.

You don't need a background in music or any musical instruments or equipment other than a Mac. However, if you happen to have some instruments around, you'll be invited to play and record them. And for those of you who have always dreamed of learning to play piano or guitar, Bonus Lesson 1, "Learning to Play Piano and Guitar with GarageBand," walks you through GarageBand's first learn-to-play lesson.

There is also a bonus GarageBand for iOS overview lesson that shows you how to create projects, change instruments, record, add loops, mix, save, and share your GarageBand for iOS projects via iCloud. You can find both bonus lessons online on the same page as the lesson files.

What GarageBand Does for You

Recording, arranging, and sharing original music were once daunting and costly endeavors that required a lot of money, time, and resources to accomplish.

GarageBand allows you to create music your way, at your own pace, giving you all of the tools you need to accomplish your finished song with no time pressure, budget restraints, or critics to hinder your progress. Best of all, GarageBand offers tools for fixing timing, pitch, and groove to improve your recorded performances.

With GarageBand and your Mac, you have a fully functioning recording studio and music workshop. How is it a workshop? Because you can also learn to play piano or guitar, design and build your own electric guitar amp and pedalboard with stompboxes, and create customized effects. Using GarageBand as a recording studio, you can attach a MIDI keyboard to play and record MIDI Software Instruments—or simply play your computer keyboard with Musical Typing. You can connect an electric guitar or bass directly through the Audio-in port or through a third-party audio interface depending on your Mac inputs and configuration. Or you can use the built-in mic on your Mac to record your instrument or vocals. Regardless of the input, once you record your tracks you can easily edit your recordings, add effects, and arrange and mix your music. If you like writing songs, you can just record your rough tracks and use the handy Note Pad to jot notes or lyrics. There's even a dictation feature so you can speak your lyrics and they will be typed for you.

You may already use your Mac for communication with friends and family through email and to collect and organize your photo and movie memories with iPhoto and iMovie. Chances are iTunes already holds and organizes all your favorite songs. Why not add a playlist of your own original music? With GarageBand on your Mac, you can fulfill your musical aspirations as well and share the finished songs to iTunes, iCloud, or even the world through SoundCloud.

This book isn't about learning software and memorizing shortcuts, menus, and buttons. It's about creating music, working with music, building music, and making all types of music sound great. As you explore different projects ranging from a little dog-walking

ditty (recorded on an iPhone while walking a dog—really) to a recording session with a professional guitarist, to creating a loopy ringtone, you’ll end up learning the shortcuts and software along the way.

The Methodology

This book emphasizes hands-on training. Each exercise is designed to help you learn the application inside and out, starting with the basic interface and moving on to advanced music editing, arranging, and mixing techniques. If you are new to GarageBand, it would be helpful for you to start at the beginning and progress through each lesson in order, since each lesson builds on information learned in previous ones. If you are already familiar with GarageBand, you can start with any section and focus on that topic. However, since GarageBand has been totally redesigned, even the seasoned GarageBand users will discover new features and insights in the earliest lessons.

The projects you’ll work with were carefully designed as practical exercises. They aren’t big-budget music recordings to show off the software. These are real-life examples, created with real people and no additional budget to demonstrate some of the range of projects you can do yourself with GarageBand.

GarageBand Course Structure

Each of the nine lessons in this book focuses on a different aspect of creating projects with GarageBand. Each lesson expands on the basic concepts of the program, giving you the tools to use GarageBand for your own projects.

The lessons in this book can be informally divided into seven sections:

- ▶ Lessons 1–2: Learning the interface and working in the timeline.
- ▶ Lesson 3: Working with pre-recorded Apple Loops and arranging music
- ▶ Lessons 4–7: Recording, editing, and adding effects to different types of instruments and tracks, including MIDI Software Instruments, vocal audio tracks, electric guitar, and drum and percussion tracks
- ▶ Lesson 8: Mixing and adding EQ effects to complete a project
- ▶ Lesson 9: Sharing your finished projects
- ▶ Bonus Lesson 1: Learning to Play Piano and Guitar with GarageBand
- ▶ Bonus Lesson 2: Working with GarageBand for iOS—an overview of recording, playing, and sharing music on your iOS device

System Requirements

This book was written using GarageBand 10 on OS X Mavericks. However, the project files and lessons are compatible with both Mavericks and Yosemite operating systems for the Mac. If you have an older version of GarageBand, you will need to upgrade to the current GarageBand version to follow along with every lesson. At the time of this printing, the GarageBand software is free with any new Macintosh computer and OS X Mavericks.

The free version of GarageBand includes one Drummer, 50 Software Instrument sounds, and 500 loops. There is an optional one-time GarageBand in-app purchase that includes an additional 17 drummers, 150 software instrument sounds, and 1,500 loops.

The step-through exercises in this book do not require the purchased upgrade. The system used to create the projects in this book was fully loaded with the in-app purchase so the screenshots may not always match your screen.

Occasionally, there will be a bonus exercise, or a sample of a finished version of a song where I took advantage of the additional sounds and loops. You will be advised in those cases that if you have the additional download installed, you can open up a sample project to see and hear my final version of the project. In some cases, such as the electric guitar recording session project in Lesson 6, there will be two versions of the project. One version will include the drummer track that the guitarist used for his actual recording. The other version will include the default drummer track that does not require the in-app purchase. Regardless, both versions of the project will follow the identical steps and include the identical regions.

Before you begin the lessons in this book, you should have a working knowledge of your Mac, OS X, your iPhone or iPad, and iOS 7. You don't need to be an expert, but you do need to know how to use the mouse and standard menus. Those of you with GarageBand for iOS who wish go through Bonus Lesson 2 should have a basic knowledge of how to use your iPhone or iPad and how to use an iOS 7 touch screen.

What do you need to know about your Mac before starting? It would be helpful if you are comfortable with opening, saving, and closing apps and files on the Mac, as well as how to tap, swipe, and click your mouse or trackpad. You will need a working understanding of how OS X organizes files on your computer. If you need to review any of these techniques, see the printed or online documentation that came with your device.

Copying the GarageBand Lesson Files

The *Apple Pro Training Series: GarageBand* lesson files must be downloaded to your Mac in order to complete the lessons in this book. After you save the files to your hard disk, each lesson will instruct you in their use.

To download these files, you must have your book's access code, which is provided on a card in the back of the printed editions of this book and on the "Where Are the Lesson Files?" page in electronic editions.

For complete download instructions, see "Downloading GarageBand Projects for This Book" in Lesson 1.

Resources

Apple Pro Training Series: GarageBand is not intended to be a comprehensive reference manual, nor does it replace the documentation that comes with the application. Rather, the book is designed to be used in conjunction with other comprehensive reference guides. These resources include:

- ▶ The companion Peachpit website: As GarageBand is updated, Peachpit may choose to update lessons as necessary. Please check www.peachpit.com/apts gb.
- ▶ The Apple website: www.apple.com
- ▶ The Reference Guide: Accessed through the GarageBand Help menu, the Reference Guide contains a complete description of all features.
- ▶ *Apple Pro Training Series: iPhoto* (Peachpit, 2014), by Dion Scoppettuolo, is an excellent companion to this book. Learn how to use iPhoto to enhance your photos, create slideshows, and print keepsake photo books on both Mac OS X and iOS.
- ▶ *Apple Pro Training Series: iMovie* (Peachpit, 2014), also by Dion Scoppettuolo, is an excellent companion to this book. Learn how to use iMovie to create first-class movies, advanced slideshows, and fun movie trailers on both OS X and iOS.

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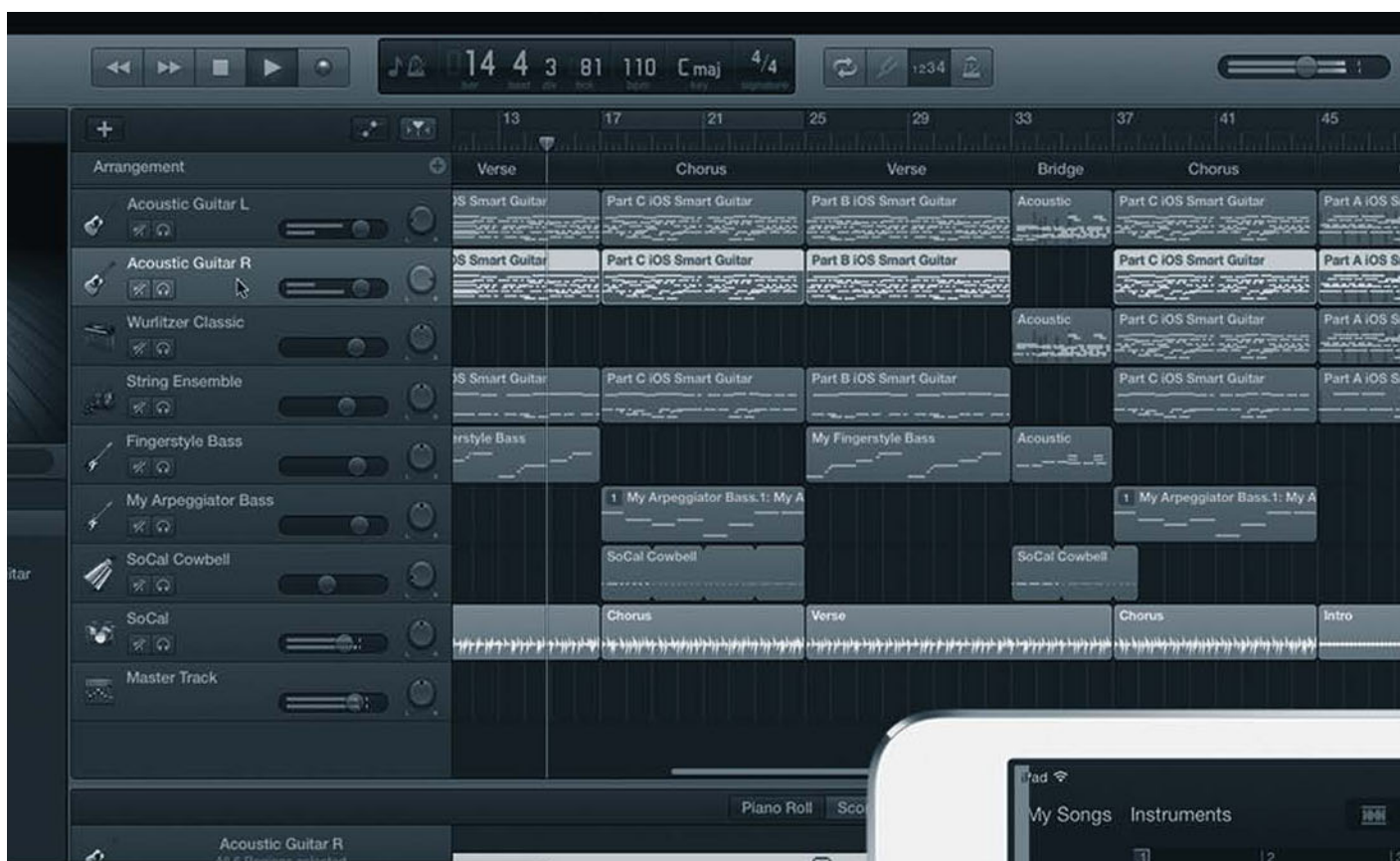
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Lesson Files

APTS GarageBand Book Files > Lesson 4 > 4-1 Ditty Bass Part 1, 4-2 Bass 1 Recorded, 4-3 Bass Part 2, 4-4 Bass Part 2 Recorded, 4-5 Edit Strings, 4-6 Arrangement Track, 4-7 Finished Ditty

Time

This lesson takes approximately 90 minutes to complete.

Goals

Record a Software Instrument take

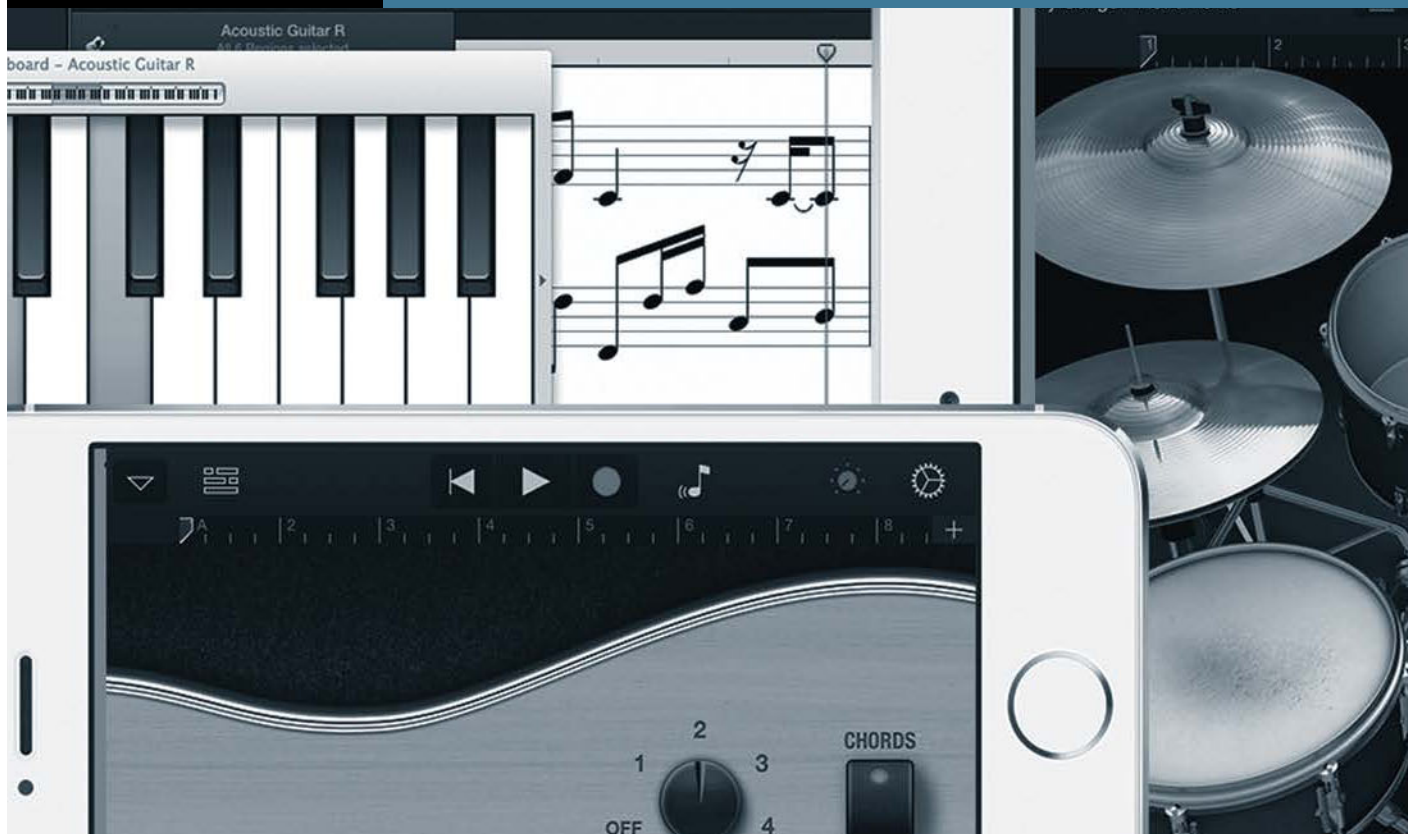
Fix the timing of notes in the Piano Roll Editor

Record multiple takes of a bass part

Choose a take

Edit multiple notes at once in the Piano Roll Editor

Use arrangement markers to copy parts of a song



Lesson 4

Recording and Editing Software Instruments

You already have a basic understanding of the GarageBand window, and you have some experience working with tracks. Now it's time to dive in and start filling those tracks with custom music that you create with Software Instruments.

In this lesson, you'll learn recording and editing techniques for building music with Software Instrument regions. You'll also learn how to change instruments for Software Instrument tracks in the timeline.

You have four ways of recording Software Instrument parts into the timeline: single-take recording, multiple-take recording, multiple-track recording, and overdub recording. You'll work with the first three methods in this lesson. Along the way you'll also learn how to edit and fix timing on your Software Instrument recordings. You'll explore the fourth option, overdub recording, in Lesson 7, "Creating Drum and Percussion Tracks," when you use it to record an original hip-hop beat.

Preparing the Project

Let's take a moment to open and save the first project for this lesson before moving on to the main exercises.

- 1 Open the project **4-1 Ditty Bass Part 1** from the Lesson 4 folder.
- 2 Save it to your My GarageBand Projects folder on the desktop.
- 3 Play the project once and listen closely to the bass parts that you will be recording shortly.



This is the same project you worked with in Lesson 2, “Working with Tracks.” The difference is that there’s a new section at the end that will be used as a bridge between the second verse and second chorus. Those parts have not yet been created. At the end of this lesson you’ll use the arrangement track to duplicate parts of the song to build it up to a full song length.

There’s just one catch you should be aware of before you get started.

Using Catch Mode to Keep the Playhead Visible

While you record or edit your finished recordings, it’s a good idea to be able to see the playhead at all times. When Catch mode is on, the visible section of the tracks area or editor follows the playhead during playback and recording. If Catch mode is turned off, the playhead moves past the right edge of the visible portion of the window because the window doesn’t update.

Independent Catch buttons in the tracks area, Audio Editor, and Piano Roll Editor menu bar allow you to turn Catch mode on or off.



Let's look at the project with Catch mode on and off so you understand how it works.

- 1 Press Command-Right Arrow or drag the horizontal zoom slider in the tracks area to the right to zoom into the timeline until you can see only the intro and the beginning of the verse parts of the song.
- 2 Check to see if Catch mode is on (the Catch button is blue). If not, click the Catch button to turn on Catch mode.
- 3 Start playback and watch the playhead. When it gets to around the middle of the tracks area, the playhead remains stationary while the tracks scroll underneath the playhead.



- 4 Continue playback. Click the Catch button to turn off Catch mode. The playhead continues moving off the right side of the screen.



- 5 Click the Catch button again to “catch” the playhead so that it displays on the screen. The playhead will gradually work its way back to the middle of the tracks area while always staying visible, with the regions scrolling beneath it. When you reach the last measures of the song, the playhead moves toward the right until it reaches the end-of-project marker.
 - 6 Zoom out of the timeline until you can see all the regions in the tracks area again.
- Now that you know how Catch mode works, you can make sure it is on when recording in the timeline. That way, you can keep an eye on the recording in real time as it forms a region in the timeline.

Single-Take Recording

A single-take recording begins on a selected track at the playhead position and continues until you stop recording. This is an excellent recording method when you’re practicing or just want to quickly record a musical riff, melody, or idea so you don’t forget it.

The result is a single region containing whatever notes were played while recording. This method is similar to recording video or using a voice recorder: The hardest part is the performance. Of course, with Software Instrument recordings every part of the recording is editable, so no worries. Also, you’ll use keyboard shortcuts whenever possible to keep your hands on your instrument (computer keyboard) rather than a mouse or trackpad.

In the next series of exercises you’ll create a single-take recording of the bass part for the Dog Walk Ditty’s first verse. Let’s get started:

- 1 Select the Fingerstyle Bass track header. The region within that track is the Fingerstyle Bass part that you will record.



- 2 Press Command-D to duplicate the selected track. An empty Fingerstyle Bass track appears in the timeline below the original track.



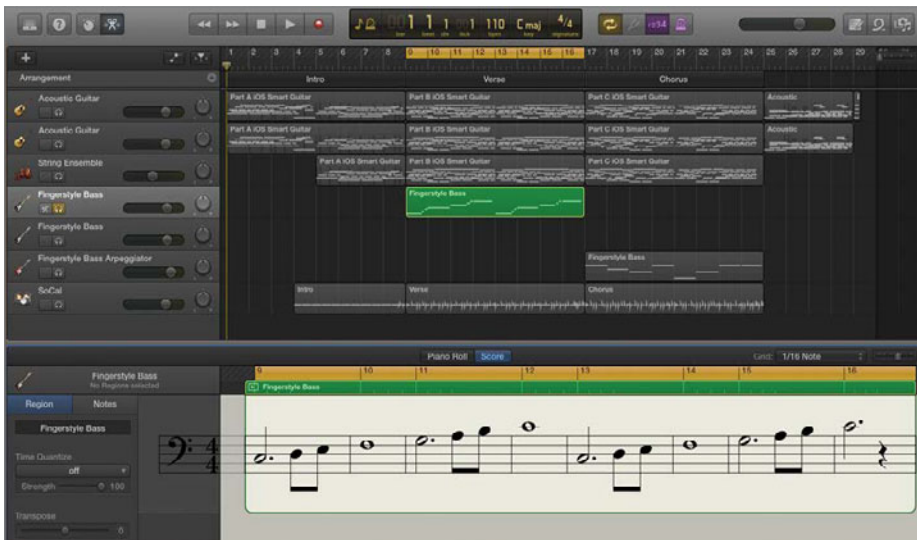
This is the track where you will record your bass part.

- 3 Press C or click the Cycle button to show the yellow cycle area on the top half of the ruler. The cycle area should be from bar 9 to bar 17.



NOTE ► If for some reason you do not already have a cycle area between bars 9 and 17, drag the cycle area to create one.

- 4 Press the Up Arrow key to select the first Fingerstyle Bass track. Press S to solo the selected track. Press E to show the selected region in the Score Editor.



- 5 Press the Spacebar to start playback and listen to the bass part. Follow along with the playhead in the editor as it plays the notes in the Fingerstyle Bass region.

The part is very simple to play (by design). Let's give it a try using your computer keyboard.

Playing Music with Your Computer Keyboard

You can play and record Software Instruments using an external MIDI music keyboard, the onscreen keyboard, or musical typing. In the exercises for this lesson, you'll use musical typing to turn your Mac computer's keyboard into a fully functional MIDI keyboard.

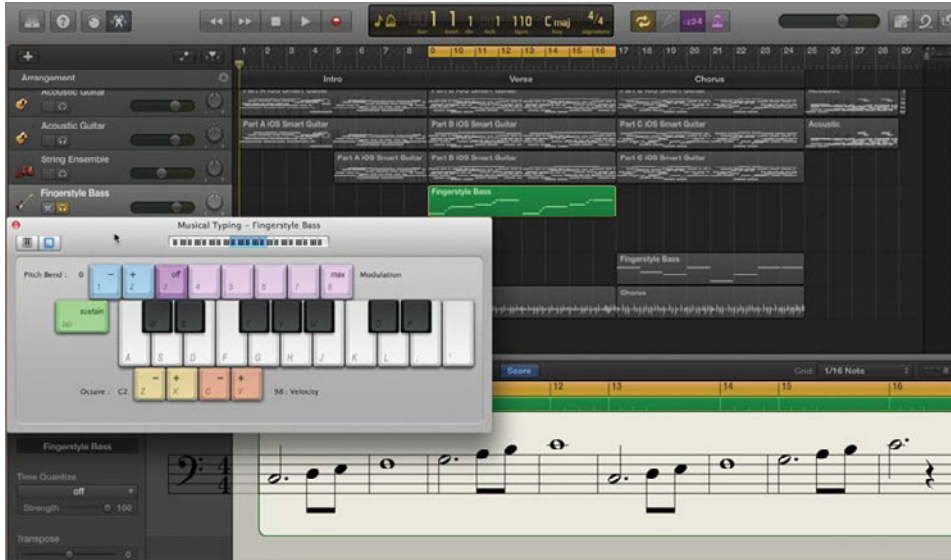


The Musical Typing keyboard shows which musical keys correspond with the keys on your computer keyboard. Notice that the Tab key works as a sustain pedal. The Z and X keys will modulate the octave lower and higher, respectively, while C and V lower and raise the velocity (the relative volume is based on how hard you strike the key). You can click the keys on the Musical Typing window with your cursor or play them on your computer keyboard.

- 1 Choose Window > Show Musical Typing or press Command-K. The Musical Typing window appears over your workspace. Luckily, it is a floating window so you can move it anywhere you'd like on your screen.

NOTE ► You can click the notes in the Score Editor to see the name (key) of each note and octave. C2 is Middle C on the keyboard. C3 is one octave higher, C1 is one octave lower, and so on. The blue area on the mini keyboard at the top of the Musical Typing window shows which octave is active in the window.

- 2 Drag the Musical Typing window below the Fingerstyle Bass track header so that you can still see the Fingerstyle Bass region in the track and the notes in the Score Editor.



- 3 Start playback. The notes on the Musical Typing keyboard darken as they are played. Watch carefully to see the pattern of the notes that are played.

The good news is that I intentionally composed this part so it would be easy to play and remember. All you have to do is play the middle keys on your computer keyboard sequentially: A, S, D, F, G, H, J, K, L. They correspond with the musical notes (the first eight white piano keys) shown on the Musical Typing keyboard: C, D, E, F, G, A, B, C.

- 4 Stop playback. Press each of the keys on your keyboard in order: A, S, D, F, G, H, J, K, L. Now that you've played the notes, you can practice the timing.
- 5 Click the Metronome button in the toolbar to turn on the click track.




NOTE ► The shortcut K to turn on or off the metronome won't work when the Musical Typing window is displayed because K is one of the keyboard keys used to play music. The same applies to any keyboard shortcuts that consist of a letter without a modifier key.


- 6 Start playback and practice along with the prerecorded bass part. You can use the audio of the Fingerstyle Bass track and the visual of the playhead moving over notes in the Score Editor as guides. Unsolo the Fingerstyle Bass track and practice a few times with the full song. When you are ready to record, stop playback.

It's time to lay down a track. That's musician-speak for recording an instrument onto a track.

Recording a Single Take in the Timeline

You have all the skills to record this part. All you need to do is hide the editor, turn off Cycle mode, and set your count-in. Cycle mode is used for multitake and overdub recording. Although using the cycle area was useful for practicing your part, it must be turned off to perform a single-take recording. Remember, many keyboard shortcuts do not work while the Musical Typing window is open, so you'll need to manually click the buttons to turn off Cycle mode and hide the editor.

- 1 Click the Cycle button to turn it off. 

- 2 Click the Editors button to hide the editor. 

- 3 Drag the Musical Typing window to the bottom of the tracks area.



The last thing to do before recording is set a “count-in” so that the metronome will click for one full bar (four clicks in this case) or two full bars (eight clicks) before the actual recording begins. The count-in gives you a “one-two-three-go” so that you don’t have to start playing the instant you click Record. The Count-In button is on the left side of the Metronome button and turns purple when it is turned on.

- 4 Click the Count-In button to turn it on and set the count-in to two bars so you will hear eight clicks before you start recording.



- 5 Choose Record > Count-In > 2 Bars.
- 6 Make sure the empty Fingerstyle Bass track is selected.
- 7 Click bar 9 on the ruler to move the playhead to that position.



In GarageBand, the color red is only used for recording. During a recording, the record button turns red, whereas a red region appears in the timeline as you record to represent the live recording. Also, the playhead turns red during recording, as does the LCD display during recording count-in.

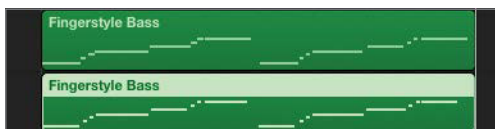
Starting the instant you click Record, the playhead will move back two measures from its current position. You will hear the count-in for eight beats as the playhead moves across the two bars in the ruler toward the record-start position. Time to record—good luck!

- 8 Click the Record button in the transport controls on the toolbar. Record the bass part that you practiced. A red region appears in the selected track as you record. The region doesn't appear until you record the first note. When you are finished recording, press the Spacebar to stop recording.



Notice that the newly recorded region changes from red to green, indicating it is a Software Instrument region.

- 9 If you don't like your recording and want to try again, press Command-Z or choose Edit > Undo Recording. Repeat step 8.
- 10 Press Command-S to save your finished recording. Close the Musical Typing window.



NOTE ► Saving is an important part of recording because it saves the recording with the project file. You still have the option to delete or edit the region at another time.

The recorded region is named after the track and should look a lot like the original Fingerstyle Bass region in the track above it.

- 11 Mute the original Fingerstyle Bass track. Listen to your recording with the rest of the tracks. How does it sound?

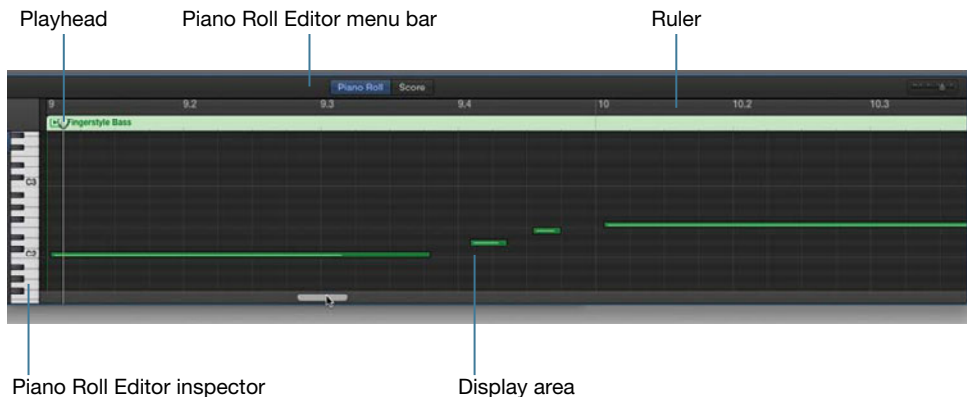
Don't worry if it isn't perfect; you'll fix the timing in the Piano Roll Editor next.

Fixing Notes in the Piano Roll Editor

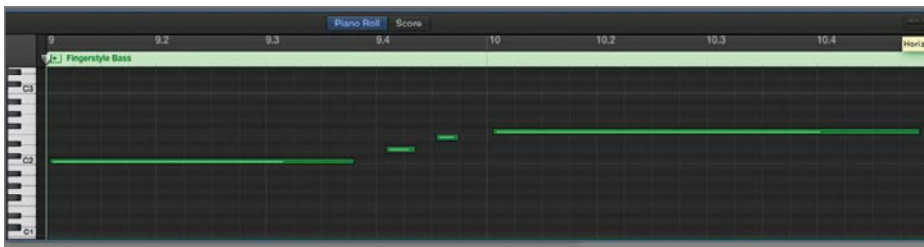
Previously, you used the Score Editor as a guide while you practiced the bass part. For this exercise you'll work with the Piano Roll Editor to modify the length and position of the individual bass notes to fix any timing issues your recording may have.

NOTE ► If you did not complete all of the previous exercises in this lesson, open the project **4-2 Bass 1 Recorded** and save it to your projects folder. In this version of the exercise, you'll work with a bass part that I recorded.

- 1 Move the playhead to bar 9 in the timeline.
- 2 Select the Fingerstyle Bass track containing your new recording.
- 3 Press E to display the Score Editor. Click the Piano Roll button to display the Piano Roll Editor.



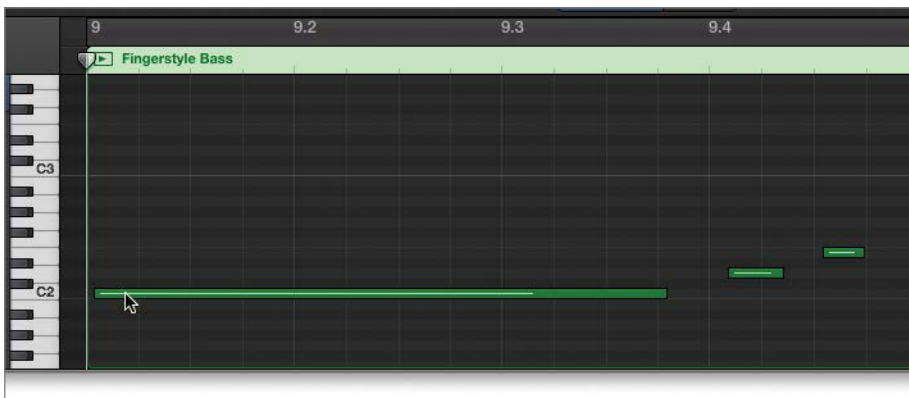
- 4 Swipe over the region in the Piano Roll Editor display area left or right, or drag the horizontal slider at the bottom of the editor (which appears when you swipe) to position the beginning of the region (bar 9) at the beginning of the visible area of the editor. Also adjust the horizontal zoom slider in the editor or pinch on your touchpad as needed until the grid shows each beat in the measure. The beats are listed in the editor ruler as a decimal point after the bar number, such as 9.3 for the third beat of bar 9.

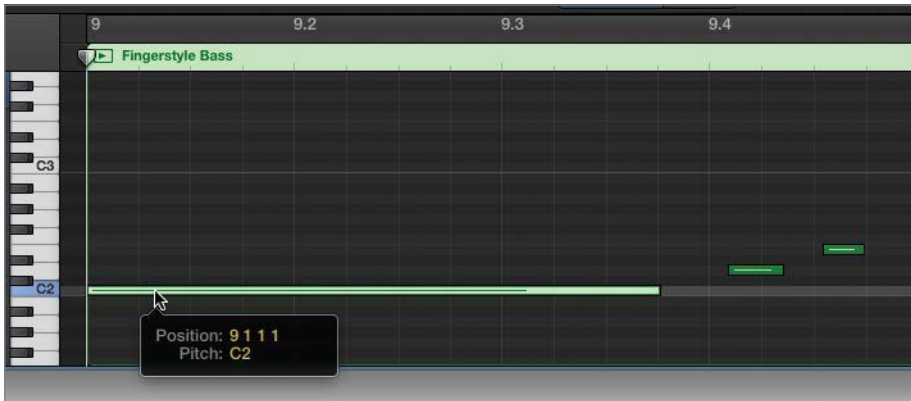


Human performances usually aren't perfect. Sometimes the imperfections in music add subtle nuances and feeling to a song. In fact, you probably could get away with your recording as is, with no additional editing. However, since you need to learn how to edit anyway, let's fix it.

Each note (represented by a green bar in the Piano Roll Editor) should start exactly on a beat. The long notes should start exactly at the beginning of a measure (bar). To fix the timing or position of a note in the Piano Roll Editor, you simply click and drag the note in the middle to move it, and on the edge to trim or lengthen it.

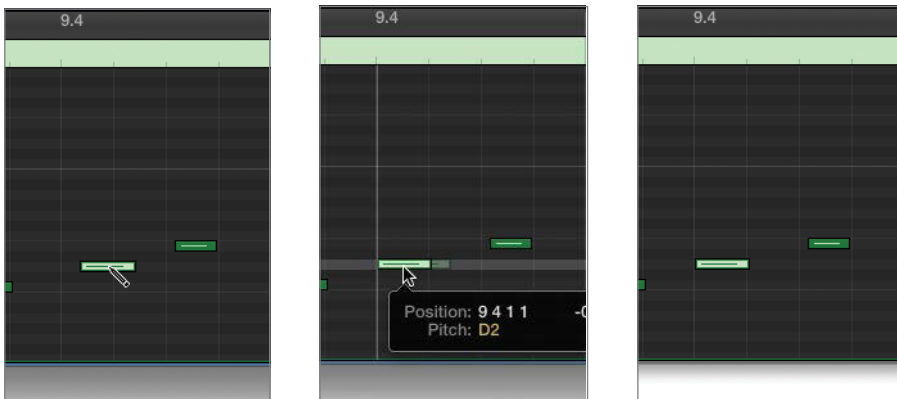
- 5 Drag the first note in the region to the left until it starts at the first beat (beginning) of bar 9. Chances are, your first note will not look exactly like the one shown in the screenshot. Regardless of its length, you'll need to move the first note to the beginning of bar 9.





Notice that when you select a note, the Notes tab at the top of the Piano Roll Editor inspector turns blue.

- 6 Drag the second note to the fourth beat of bar 9 (9.4).



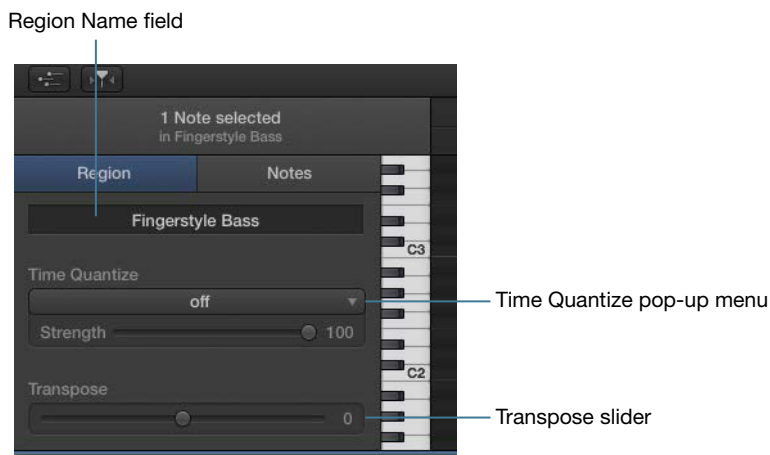
NOTE ► If your second and third notes are significantly shorter or longer than a quarter of a beat, you can trim the edges so that they fit between the gridlines, like the notes pictured in the screenshots.

As you can see, fixing notes individually is not difficult. However, if you are working with a long region or a lot of notes, this process can become rather tedious.

Quantizing Notes in a Region

Rather than manually moving each and every note in a region to fix the timing, you can *quantize* the timing. Quantizing is a digital music term for automatically fixing timing based on set parameters. In this case, GarageBand will automatically move all the notes to the nearest gridline based on the settings in the Piano Roll Editor inspector.

You can use the Time Quantize button to fix the timing of all the notes in an entire region or selected notes. These timing changes are nondestructive. The original timing is never lost, so you can turn off Time Quantize at any time to return to the original recorded timing.



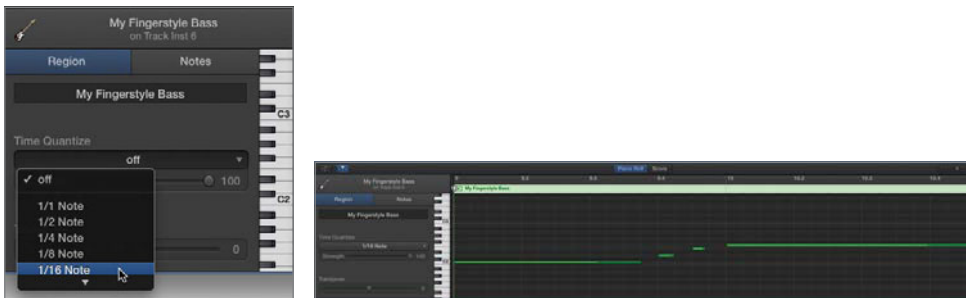
One thing to keep in mind is that the Time Quantize feature is selection based. If you have a note selected, only that note will be fixed. To fix all the notes in a region at once, you need to first deselect any notes. The Piano Roll Editor inspector controls change depending on whether you have a region (all notes) or individual notes selected. The Region or Notes tabs change automatically based on your selections.

- 1 Click any empty space in the editor display area to deselect all notes within the region. The top of the inspector shows which items will be modified.
- 2 In the Piano Roll Editor inspector, type *My* in the Region Name field so that the name of the region changes to *My Fingerstyle Bass*. Press Return to implement the change. This will help distinguish your recording from the one provided in the starting version of the project.



NOTE ► The top of the Piano Roll Editor inspector shows what is currently selected, and therefore what will be modified by changes to the controls. If your inspector shows no regions selected, go up to the timeline and select the *My Fingerstyle Bass* region.

- 3 In the Piano Roll Editor inspector, click the Time Quantize pop-up menu and choose 1/16 Note. Perfect timing—instantly!



The Strength slider is only available when an entire region is selected. Leave the Strength slider set to 100. Lowering the strength decreases the amount of quantization.

- 4 Press E to hide the Piano Roll Editor. Press K to kill the click track (to turn off the metronome).
- 5 Play the project from bar 9 to 17 to hear your edited recording in action. Well done!
Now that your recording is finished, you don't need the original Fingerstyle Bass track. To delete the track, let's use the shortcut menu in the track's header.
- 6 Control-click (or right-click) the track header for the top Fingerstyle Bass track. Choose Delete Track from the shortcut menu. Click OK in the warning dialog that says "There are regions in this track!"



7 Save your progress.

Project Tasks

You've successfully recorded a single-take Software Instrument Bass part. In a few minutes you'll work with the Smart Controls and the arpeggiator to record a more complex bass part using multiple-take recording. For now, you'll hone your current skills to learn and practice the new bass part.

Create a cycle area from bar 17 to 25. Display the Note Pad to see which notes you need to play for the Bass Part 2 Chorus. Open the Musical Typing window and play the new part along with the song. Use the Score Editor to look at the notes you need to play. Remember that you are just learning the individual notes. You'll add the arpeggiator in the next section.

The keys you will be playing on your computer keyboard/Musical Typing window are K, G, F, K, A, F, K. Once you have practiced the part, stop playback.



Working with Smart Controls and the Arpeggiator

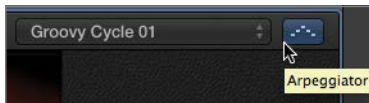
For the second bass recording, you'll work with the arpeggiator to create a bass part that accompanies itself. The arpeggiator plays a sequence of notes for every note you press. If you play a chord, each note of the chord is played a note at a time in the specified pattern or preset. The best way to get a feel for the arpeggiator is to explore the settings already applied to the region in the Fingerstyle Bass Arpeggiator track. Keep in mind that the arpeggiator is applied to an entire track, not the specific region, so any region that you add or any playing you record to an arpeggiated track will play the arpeggiated pattern unless you turn it off.

- 1 Close the Musical Typing window to make more room in your workspace.
- 2 Select the Fingerstyle Bass Arpeggiator track header, if it is not already selected.
- 3 In the toolbar at the top of the window, click the Smart Controls button.

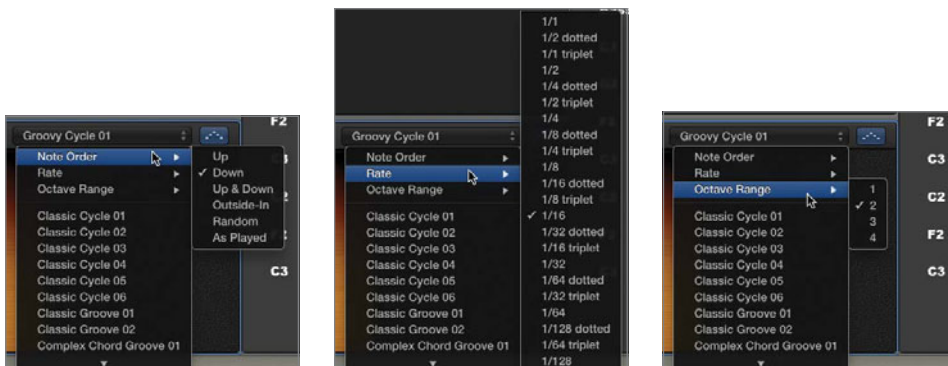


The Smart Controls pane replaces the editor at the bottom of the window.

The controls that look like they are mounted on a bass guitar can be used to adjust the sound of the instrument, but you can ignore them for now. For this exercise you'll focus on the Arpeggiator button and Arpeggiator pop-up menu located in the upper right of the Smart Controls pane.



- 4 Solo the Fingerstyle Bass Arpeggiator track. Start playback. What you hear is the sound of the Groovy Cycle 01 Arpeggiator preset.
- 5 Continue playback. Click the Arpeggiator button to turn it off. The notes play one at a time, just as you practiced them in the project tasks.
- 6 Click the Arpeggiator button to turn it back on. Stop playback.
- 7 Click the Arpeggiator pop-up menu to see the various options.



- Note Order is the direction of arpeggiated notes.
 - Rate is the note value for arpeggiated notes based on the song tempo.
 - Octave Range is how many octaves the arpeggio covers.
 - Arpeggiator Presets are listed below the line starting with Classic Cycle 01.
- 8 Start playback. Try several arpeggio presets. They all sound pretty good. When you are finished trying presets, choose the Groovy Cycle 01 preset. Stop playback.

Now that you know how to turn on the arpeggiator and change the preset, you're ready to record.

Preparing the Project

You still need to create a track to record your second bass part for the chorus section of the song. Let's go ahead and rename the track. Also, it wouldn't hurt to practice one more time before recording.

- 1 Select the Fingerstyle Bass Arpeggiator track if it is not already selected.
- 2 Press Command-D to duplicate the track.
- 3 Control-click (or right-click) the new track's header and choose Rename Track from the shortcut menu. Type *My Arpeggiator Bass* in the track's name field. Press Return to set the new name.



- 4 Look at the Smart Controls pane for the new track. Notice that the Arpeggiator settings are already on and ready to go. That's because duplicating a track also duplicates the track's instrument and settings. Did you notice that the new track was soloed because the track you duplicated had the Solo button on at the time you created the duplicate track?
- 5 Press B to hide the Smart Controls pane. Press Command-K to open the Musical Typing window.
- 6 Move the Musical Typing window to the empty space at the bottom of the tracks area where the editors and Smart Controls would be if they were showing.
- 7 Start playback and practice the part a few more times using the Note Pad as a reminder of which notes (keys) to play (type) on the Musical Typing keyboard.



TIP If practicing or recording with an arpeggiated Software Instrument is distracting you from concentrating on your performance timing, you can always turn off the arpeggiator in the Smart Controls and then turn it back on after you record.

8 Save your progress.

It's time to try recording multiple takes of the arpeggiator bass part. The good news is that with multiple takes, you can pick which take you want to use and still edit it to fix any performance issues you may have while recording.

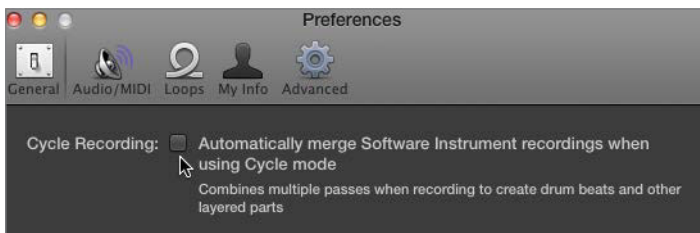
Recording Multiple Takes

Multiple-take recording means you can record multiple versions (takes) in succession. Once you stop recording, you can preview the various takes and choose which one you want to use in the project.

The secret to multiple-take recording involves the Cycle Recording preference and the cycle area in the timeline. During multiple-take recording, a new take is recorded each time the cycle repeats. Let's try it.

NOTE ► If you did not complete all of the previous exercises in this lesson, open the project **4-3 Bass Part 2** and save it to your projects folder. Also, you'll need to Press Command-K to show the Musical Typing window before continuing on with the next step.

- 1 Choose GarageBand > Preferences.
- 2 In General Preferences, make sure Cycle Recording is deselected.



If Cycle Recording is selected, each recording cycle is combined within one take. You'll try this in Lesson 7, "Creating Drum and Percussion Tracks," to create a complex drum beat. With Cycle Recording deselected, you will record a new take with each cycle.

- 3 Close the General Preferences.
- 4 Turn on the metronome.
- 5 Select the My Arpeggiator Bass track if it is not already selected. Recordings always go to the selected track.



Your goal is to record at least four full takes before you stop recording. Four takes will give you plenty to choose from when you need to select the best take.

- 6 Click the Record button to begin multiple-take recording. You will hear the count-in before recording starts. Play the bass part on your computer's keyboard. After at least three full cycles, stop recording. You are welcome to record more takes if you wish. With each cycle you will see a red region for the live recording, whereas a green region remains underneath for the previous finished take.



Take a look at the finished multiple-take region. The number in the upper-left corner of the region shows the current take number. The name of the region is the same as the name of the track, with the addition of a decimal point and take number at the end. In this case, it reads *My Arpeggiator Bass.4*.

- 7 Turn off the metronome. Close the Musical Typing window and hide the Note Pad.
- 8 Save your project.

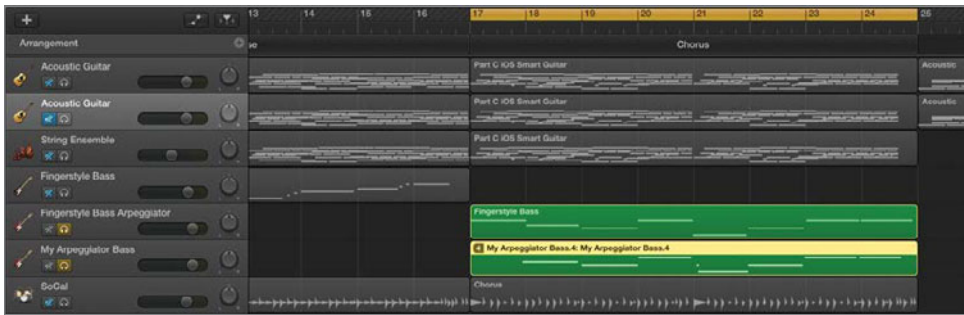
You've finished recording multiple takes of the second bass part. In the next section you'll choose a take to use in the finished project.

Choosing a Take

After you've recorded a multiple-take region, you can use the Takes pop-up menu in the upper-left corner of the region to change to a different take. In this exercise you'll evaluate the different takes and choose the one closest to the original Fingerstyle Bass part that you used as a guide. Later, you can fix the timing of the performance in the Piano Roll Editor.

NOTE ► If you did not record a multiple-take region in the previous exercise, open the project **4-4 Bass Part 2 Recorded** and save it to your projects folder.

- 1 Select the multiple-take region in your timeline and press Command-Right Arrow or the horizontal zoom slider to zoom into the region until it is easy to compare the notes (dashes) in the multiple-take region with the Fingerstyle Bass guide region.



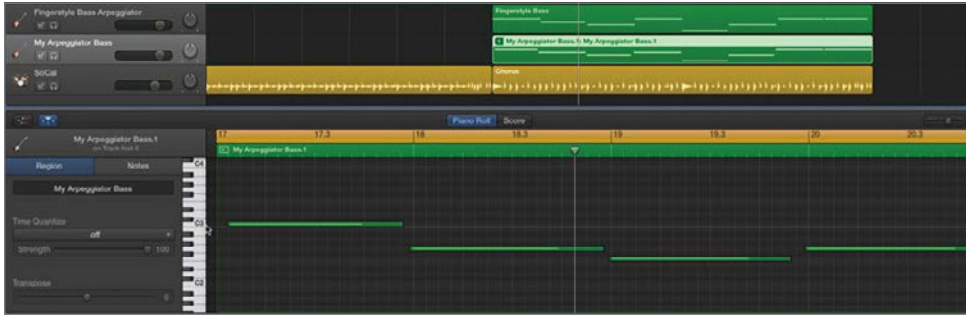
- 2 In the upper-left corner of the multiple-take region, click the number (4 in the screenshot) to open the Takes pop-up menu. The Takes menu lists each take, along with an option to delete unused takes or delete the current take. From the Takes menu, choose Take 1.



- 3 Listen to Take 1 with the other bass part. Then unsolo both arpeggiator bass tracks, and mute the original Fingerstyle Base Arpeggiator track. Listen to your bass part with the rest of the tracks.
- 4 Choose each take and listen to it with the song. If needed, solo your take with the original arpeggiator bass track to hear them together. When you have determined which take is best, keep it selected and move on to the next step.

NOTE ► If you are working with the prebuilt project **4-4 Bass Part 2 Recorded, Take 1** is the best take.

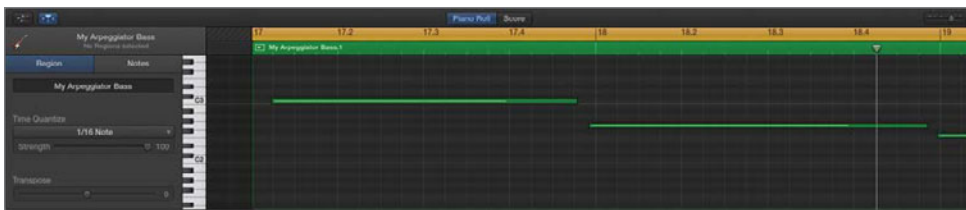
- 5 Double-click the multiple-take region with the best take showing to open it in the Piano Roll Editor.



NOTE ► If the Score Editor opens, click the Piano Roll button to switch editors. If you don't see the selected region in the Piano Roll Editor, click the Catch button in the upper-left corner of the editor and start playback. If you don't see any dashes (MIDI notes) on the grid, you may be looking at the wrong octave range within the region in the editor. Swipe up or down until you see the C3–C2 octave range in the visible area. Use the vertical keyboard at the left of the editor as a guide.

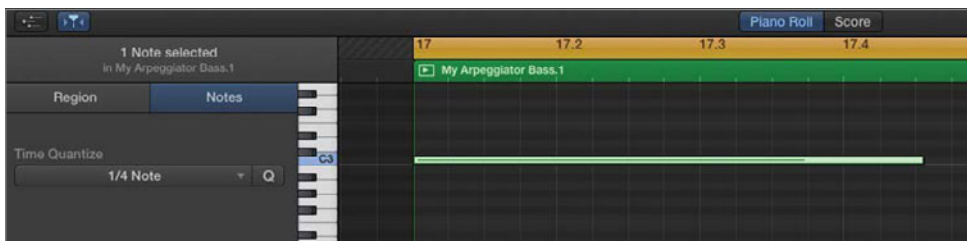
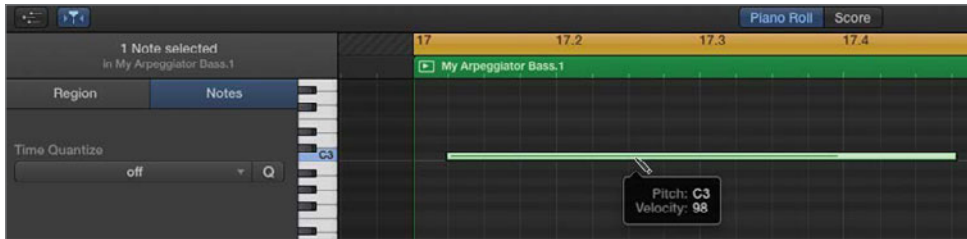
Look at the notes in the Piano Roll Editor to see where they begin. Chances are, the notes do not begin precisely at the beginning of bars or beats as they should.

- 6 Adjust the horizontal zoom slider in the editor until you see each beat in the ruler, four beats (indicated with decimal points) per measure.



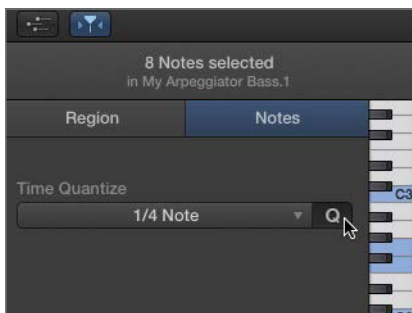
Each note starts at the beginning of a measure (bar), so you can quantize the notes to the nearest 1/4 note (beat).

- 7 Select the first note, and choose “1/4 note” from the Time Quantize pop-up menu.



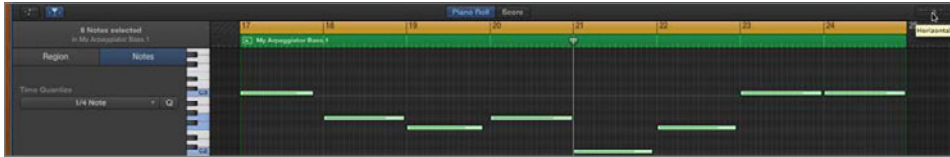
The selected note moves to the beginning of the 17th measure (bar 17).

- 8 Press Command-A, or choose Edit > Select All to select all the notes in the region. The top of the Piano Roll Editor inspector shows that eight notes have been selected. Click the Q (Quantize button) to apply 1/4 note quantizing to all of the selected notes.



All of the selected notes move into position so they start precisely at the beginning of each measure.

- 9 Zoom out of the Piano Roll Editor until you can see all the notes in the region to inspect their quantized positions.



Perfect!

- 10 Press E to hide the editor.
- 11 Delete the Fingerstyle Bass Arpeggiator track. Click OK in the warning dialog.
- 12 Turn off Cycle mode.
- 13 Adjust the zoom level in the tracks area until you can see all the regions.
- 14 Save your project.



All the bass parts have been recorded and the workspace is displaying only the tracks area and headers. It's time to finish this song.

Editing Multiple Notes Simultaneously in the Editor

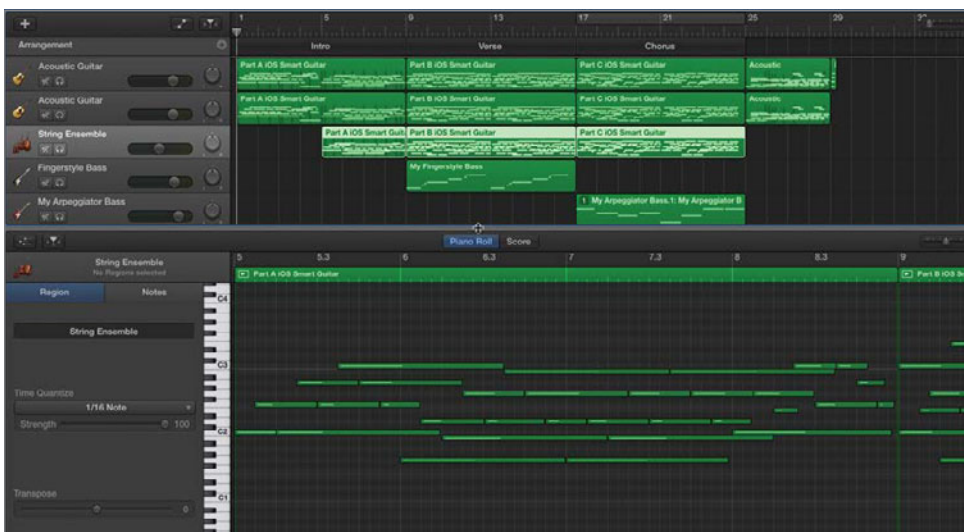
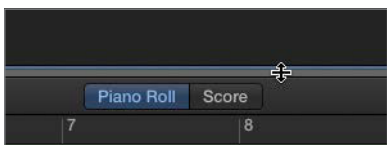
To complete this song, your next task is to clean up the busy strings regions. If you recall, the regions in the String Ensemble track are duplicates of the iOS Smart Guitar regions. The busy guitar fingering works fine for the guitar, but it is too much for strings in this song. In this exercise, you'll open the first strings region in the Piano Roll Editor, and then select and delete all of the notes in the middle of the grid. That way, all you are leaving are the highest and lowest notes. Let's give it a try.

NOTE ► If you did not complete all of the previous exercises in this lesson, open the project **4-5 Edit Strings** and save it to your projects folder.

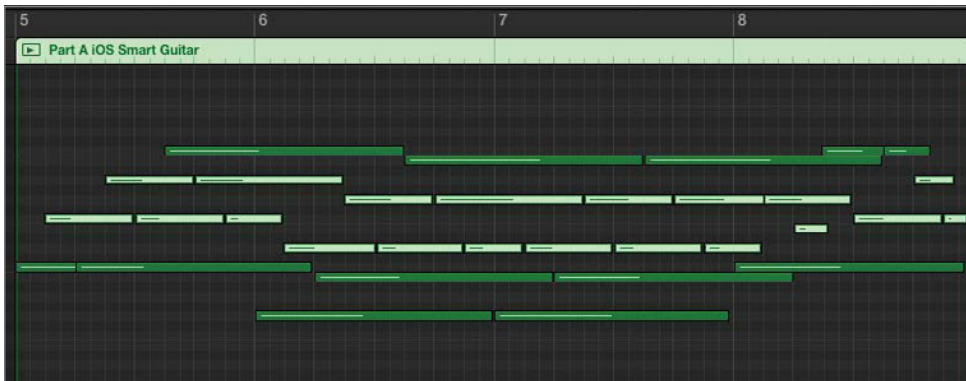
- 1 Select the String Ensemble track header. Press E to open the selected track in the Piano Roll Editor.
- 2 Adjust the horizontal zoom in the editor until the first region (Part A iOS Smart Guitar) fills most of the visible area.



- 3 Drag the top edge of the Piano Roll Editor upward to expand the editor and give you more room to work.

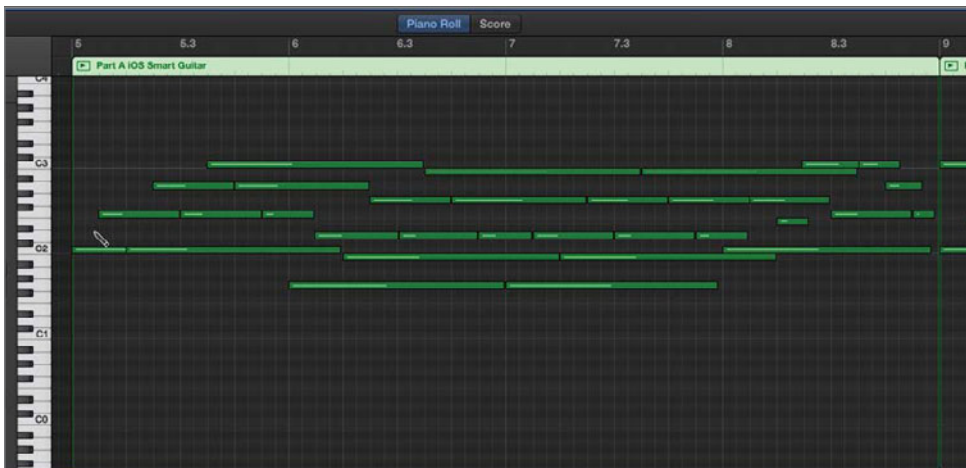


Remember, your goal is to delete middle notes; you'll keep the highest and lowest notes.



Delete the selected notes shown here

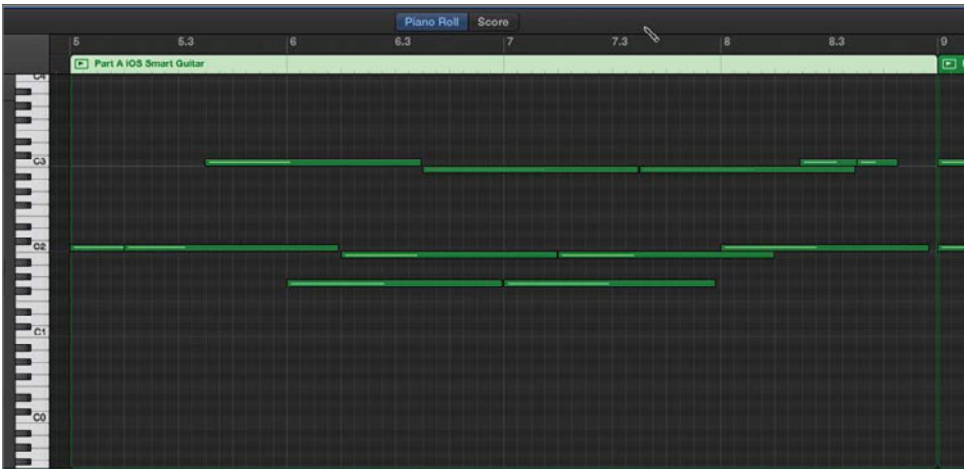
- 4 In the Part A region in the editor, click the empty grid above the first played note at the beginning of bar 5. Be careful not to click the edge of the region in the editor or you will trim the beginning of the region.



- 5 Drag up and to the right across the middle notes as shown to select them all at once.



- 6 Press Delete. The notes are removed from the region.



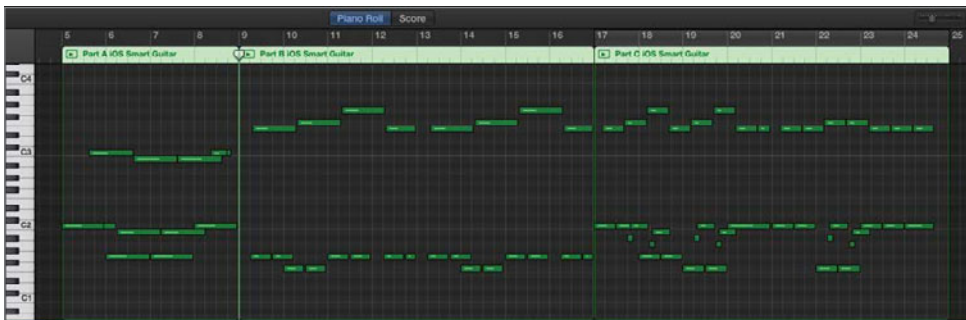
NOTE ► You can also click to select individual notes, or drag across a smaller group of notes to delete them in smaller sections if it is easier. The end result will sound the same.

- 7 Play the first part of the song to hear the edited strings region.
- 8 Save your progress.

Wow. The strings part sounds so much better. Instead of competing with the guitar part, it now feels like a supporting track.

Project Tasks

Now that you know how to clean up extraneous notes in the Piano Roll Editor, you can work on the Part B and Part C regions in the String Ensemble track. Use your best judgment when selecting “middle” notes and deleting them. The good news is that every note works, so if you delete too many or too few it will still sound great. Remember, you are just making it sound less busy. Play the song to hear the edited string regions with the rest of the song.



Edited regions with fewer notes.

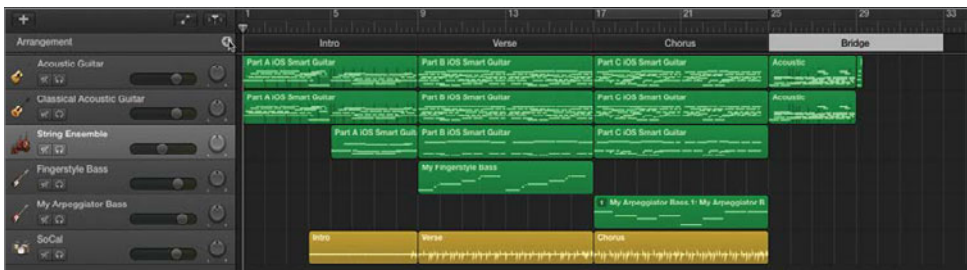
When you are finished, drag the top edge of the Piano Roll Editor down to the lower third of the window. Don't forget to save your work and close the editor.

Copying Parts of a Song with the Arrangement Track

In Lesson 1, “Working with a GarageBand Project,” you worked with arrangement markers in the arrangement track to rename the different sections of this song. Arrangement markers can also be used to move, copy, or delete parts of a song such as the chorus or verse. In this exercise you'll create a new arrangement marker for the bridge section at the end of the song. Then you'll copy and move the verse and chorus parts to lengthen the song. Finally, you'll add an outro (end) to the song. All of this can be done with arrangement markers.

NOTE ► If you did not complete all of the previous exercises in this lesson, open the project **4-6 Arrangement Track** and save it to your projects folder.

- 1 Click the Add button (+) in the arrangement track header to create a new arrangement marker. The new arrangement marker appears after the last arrangement marker currently in the track (Chorus).

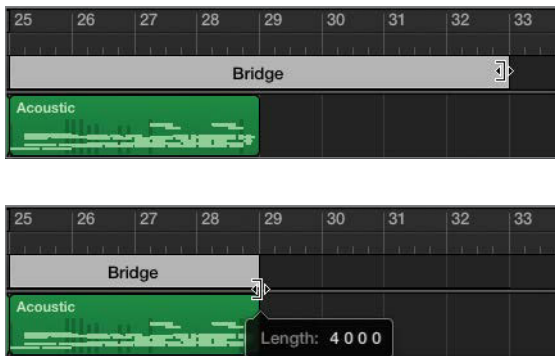


The new marker is already called Bridge, so you won't need to rename it. The marker is, however, a bit too long for this piece, so let's trim it to fit the part. First, you'll need to move the little region at the end that isn't actually part of the bridge.

- 2 Zoom into the bridge section of the timeline. The short region at the end is the last chord of the song. Drag the short region toward the right and place it at bar 36 to get it out of the way.



- 3 Drag the right edge of the Bridge arrangement marker to bar 29.



The bridge section of the song is now the same length as the bridge part.

It's time to start copying parts to build the full song. This song will have a total of seven parts: Intro, Verse, Chorus, Verse, Bridge, Chorus, and Outro.

- 4 Zoom out of the timeline as needed until you see the end-of-project marker at bar 46.
- 5 Option-drag the empty space on the Verse arrangement marker to the right and place the duplicate after the chorus at bar 25. Release the marker before you release the Option key.



Amazing. The arrangement marker and all of the regions within that section of the song are copied simultaneously.

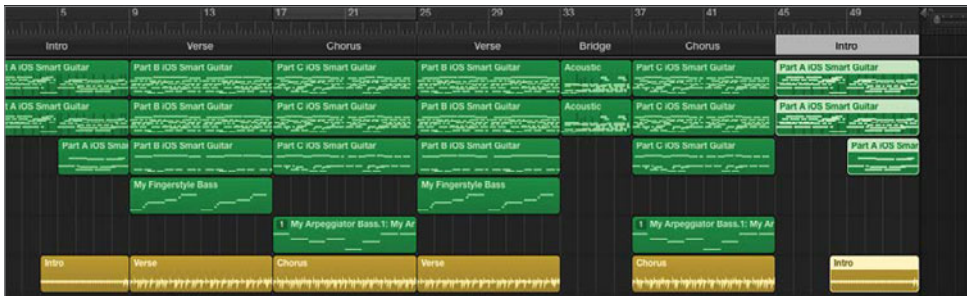
- 6 Option-drag the Chorus arrangement marker to bar 37 so the copy starts after the bridge section.



Notice that the little part of the song that you moved out of the way continues to stay the same distance from the end of the song. It just keeps getting moved toward the right with each duplicate section.

The last section to Option-drag is the Intro, which will be repurposed as the Outro with a few minor modifications.

- 7 Option-drag the Intro arrangement marker to the end of the song and place the duplicate at bar 45.



- 8 Click the name Intro on the last arrangement marker and choose Outro from the pop-up menu.

- 9 In the Outro section of the song, drag the left edge of the region in the String Ensemble track to extend it to the beginning of the section (bar 45).

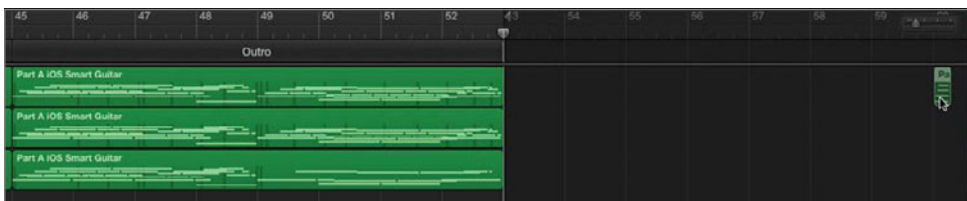


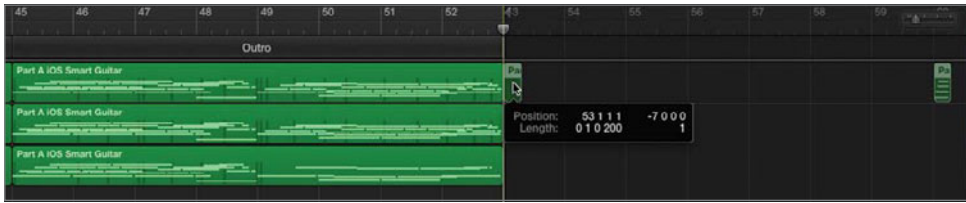
- 10 Extend the Verse drummer region in the second verse section to bar 37 so that the bridge will share the drummer region.



- 11 Move the drummer region in the Outro so that it starts at bar 45 and ends at 50.
- 12 Zoom in as needed to drag the short region (past the end-of-project marker) to the left and place it at the end of the Outro section in the Acoustic Guitar track (bar 53).

NOTE ► This final chord for the end of the song was not recorded. Rather, it was created in the Piano Roll Editor.





The end-of-project marker automatically moves one bar to the right of the last region in the song—in this case, bar 54.

- 13** Zoom out of the timeline until you can see the entire song. Play it once to hear how all of the parts work together. Save your project.



NOTE ► If you did not complete all of the previous exercises in this lesson and want to see the finished song, open the project **4-7 Finished Ditty** and save it to your projects folder.

Congratulations. You recorded and edited two different Software Instrument bass guitar parts. Along the way you also trimmed excess notes from the strings parts and used the arrangement track to build the finished song.

Project Tasks

You may have noticed that the bridge section is missing strings and bass regions. Though traditionally the bridge of a song indicates a change, this one feels a little lacking. If you'd like to finish building the bridge section, feel free. Consider duplicating the guitar part to the strings and/or bass tracks. Then remove notes to clean it up. You could also try recording a new part using either single-take or multiple-take recording. Have fun. When you are finished, save your project.

Recording Multiple Tracks

The last recording feature you'll explore in this lesson is recording to multiple tracks. For this feature, you'll open the Keyboard project template. This is more of an experimental section to show you how to record to multiple tracks. One of the most common uses for multiple track recording is when you want to record a microphone with an instrument. In this example you'll record a voice track with the built-in microphone while simultaneously playing and recording a software instrument track with the Musical Typing window. If you have a MIDI keyboard connected to the computer you can record with that device instead of Musical Typing.

You need an audio interface connected to the computer to record multiple audio instruments such as two guitars simultaneously. To record multiple software instrument tracks you will need to use an external audio interface or use the Audio MIDI Setup utility on your Mac to create an aggregate device.

MORE INFO ► You can learn more about the Audio MIDI Setup utility by quitting GarageBand and opening the utility. Go to **Go > Utilities > Audio MIDI Setup**. Once the utility opens, go to the **Help** menu and read how it works.

What notes you play, and which Software Instruments you choose to record, will be up to you.

- 1 Choose **File > New**. Click the **New Project** button in the Project Chooser and choose the **Keyboard Collection** template. Click **Choose**.



The Keyboard Collection template opens.

- 2 Save the project as *Multi-track Recording Test* to your projects folder.

The project has the Smart Controls pane showing, along with many prebuilt empty keyboard tracks.

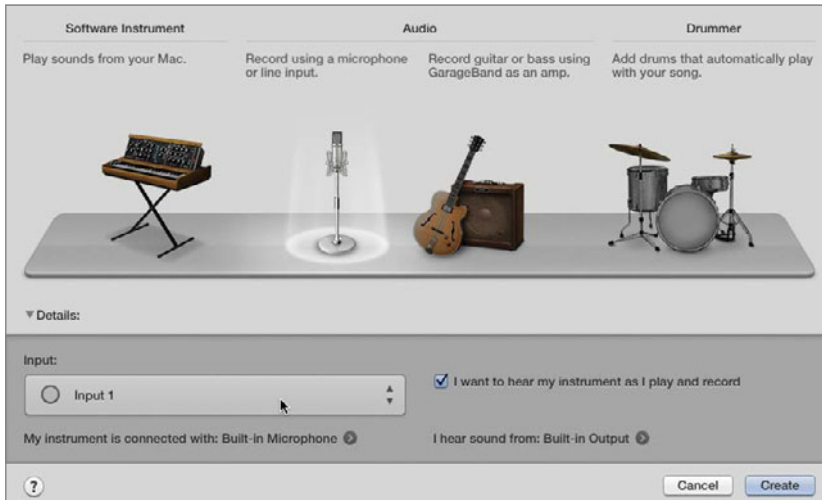
- 3 Press B to hide the Smart Controls pane.
- 4 Press Command-K to open the Musical Typing window.
- 5 Select the first track, and then play a few keys on the Musical Typing keyboard.
- 6 Press the Down Arrow key to select a track to hear how it sounds; repeat to audition additional tracks.



This project template is preloaded with a lot of different Software Instrument keyboard tracks so you can sample and compare them.

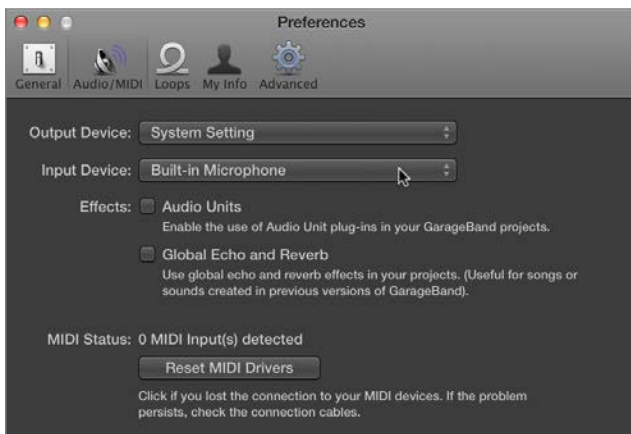
- 7 Select the track with the keyboard sound that you want to record. Click the Add Track button.
- 8 In the New Track dialog choose the Microphone icon to create an audio track using a microphone. In the Details pane at the bottom of the New Track dialog, leave the default Input setting (Input 1). Select the checkbox “I want to hear my instrument as I play and record” if it is not already selected. Don’t worry about the other settings at

this time. Click Create. You may see an Avoid feedback warning dialog that says you need to use headphones to avoid feedback. If so, click OK on the warning dialog.



Next you need to set the input to your computer's built-in microphone. The easiest way to do that is through the GarageBand Preferences.

- 9 Choose GarageBand > Preferences. In the Audio/MIDI preferences pane, select Built-in Microphone from the Input Device pop-up menu. Your other Audio/MIDI preferences may differ from the screen shot depending on your system settings and equipment. Close Preferences.



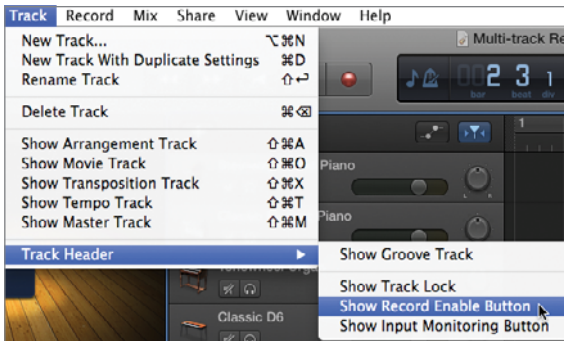
NOTE ► You can also set the Input for an audio track in the Smart Controls inspector.

The new audio track you created should be in the timeline directly below the track you selected to record your musical typing.

You already know that if you want to record to a single track you simply select the track and record. To record to multiple tracks, you need to arm them with Record Enable buttons.



- 10 Choose Track > Track Header > Show Record Enable Button.



Record Enable buttons appear on each track. The Record Enable button on the selected track is red to indicate the selected track is targeted for recording. However, since you are recording to two different tracks, and only one track can be selected at a time, you'll have to arm the tracks. How? Just click the Record Enable button. When it turns red with a white center, it is armed to record even if the track isn't selected. The Audio 1 Record Enable button will flash, while the Software Instrument track's button remains solid red. Clicking the Record Enable buttons again will turn them off.

- 11 Click the Record Enable button on the audio track you just created, and the track you want to use for recording musical typing so that both are armed (red).



It's also a good idea to monitor the input of your audio track so you can hear your microphone through headphones along with the musical typing.

NOTE ► If you do not see the **Input Monitoring** button, **Control-click** (or **right-click**) the **Audio 1** track header and choose **Track Header Components > Show input Monitoring** from the shortcut menu.

- 12** Click the **Record** button in the transport controls and play a few notes on the Musical Typing keyboard. At the same time, speak, sing, or whistle toward the built-in microphone.



- 13** When you are finished, stop recording.

The number of tracks you can record simultaneously is only limited by your audio input device.



Experiment with the different sounds. If you have a MIDI keyboard attached that is also an audio interface, you may be able to record more tracks simultaneously. In Lesson 5, “Recording and Editing Audio Tracks,” you’ll explore recording vocal tracks. In Lesson 6, “Working with Electric Guitars,” you’ll explore guitar recording.

Lesson Review

1. What button determines if the playhead stays in the visible area of the window or continues off the right edge of the window?
2. What window allows you to use your computer's keyboard as a MIDI instrument?
3. Where is the control that lets you make multiple-take recordings of a Software Instrument rather than a merged recording?
4. Is Cycle mode required for single-take recording?
5. How do you choose between takes in multiple-take recording?
6. If you quantize a region in the Piano Roll Editor, what will happen?
7. What happens if you Option-drag an arrangement marker?
8. Which controls need to be turned on in the track header to record to multiple tracks?

Answers

1. The Catch button, if turned on, keeps the playhead in the visible area of the window. When it is turned on, the window is in Catch mode.
2. The Musical Typing window allows you to use your computer's keyboard as a MIDI instrument
3. In GarageBand General Preferences, you will find a control that you deselect for multiple takes or select for merged Software Instrument recordings.
4. Cycle mode must be turned off to record a single take.
5. You can click the Takes menu in the upper-left corner of a multiple-take region to change takes.
6. Quantizing a region in the Piano Roll Editor will fix the timing of all the MIDI note events according to the specified value, such as 1/16 or 1/4 notes, which correspond to lines in the Piano Roll Editor grid.
7. If you Option-drag an arrangement marker, all the regions within that marker will be copied, along with the marker, and moved to wherever you drag the marker. This technique is useful for duplicating parts of the song such as the verse and chorus.
8. The Record Enable buttons need to be turned on in each track that you want to arm for recording.

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